

CLAIMS

1. A thin-film coated toner that is a powder toner with a softening temperature ranging from 40 to 150°C whose surface is coated substantially continuously with the thin film comprising a thermosetting resin.

2. A thin-film coated toner according to claim 1, whose fusing temperature is 145°C or lower.

3. A thin-film coated toner according to claims 1 or 2, wherein the thermosetting resin is a urea-base resin or a melamine-base resin.

4. A thin-film coated toner according to claim 3, wherein the urea-base resin is formed by resinifying a precursor of a concentrated urea-base resin on the surface of the powder toner while avoiding fusing the powder toner.

5. A thin-film coated toner according to claim 3, wherein the urea-base resin is formed by resinifying a urea-base resin precursor mixture which comprises at least either one of a urea and a urea derivative and at least either one of a formaldehyde and a formaldehyde derivative on the surface of the powder toner, while avoiding fusing the powder toner.

6. A thin-film coated toner according to one of claims 1 to 5, wherein an average film thickness of the thin film is 0.005 to 1 μm .

7. A thin-film coated toner according to one of claims 1 to 6, wherein the powder toner is a polymerized toner.

8. A thin-film coated toner according to claim 7, wherein the polymerized toner is a polymerized toner secondary particle formed by an aggregation of a polymerized toner primary particle.

9. A thin-film coated toner according to one of claims 1 to 8, wherein a true sphericity (DSF) defined by the following formula I is 0.85 or more;

$$\text{DSF} = m/M \quad \text{I}$$

wherein m represents a minimum diameter of a projection drawing of the toner and M represents a maximum diameter of the projection drawing of the same.

10. A method for producing a thin-film coated toner, comprising steps of:

dispersing a powder toner in a solid state in a water-base medium in which a dispersant is dissolved;

mixing a monomer or a pre-polymer of a thermosetting resin into the dispersion; and

resinifying the raw material while avoiding fusing the powder toner, and coating a surface of the powder toner with the thin film comprising the thermosetting resin.

11. A method for producing a thin-film coated toner, comprising steps of:

emulsion-polymerizing a toner ingredient that comprises a binder resin monomer as a raw material for a binder resin to prepare a dispersion of a powder toner;

mixing a monomer of a thermosetting resin or a pre-polymer of a thermosetting resin as a raw material for the thermosetting resin into the dispersion of the powder toner; and

resinifying the monomer of the thermosetting resin or the pre-polymer of the thermosetting resin while avoiding fusing the powder toner, and coating a surface of the powder toner with the thin film comprising the thermosetting resin.

12. A method for producing the thin-film coated toner according to claims 10 or 11, further comprising a step of aggregating the powder toner.

13. A method for producing the thin-film coated toner according to one of claims 10 to 12, further comprising a step of heating the powder toner in a temperature range that causes no thermal breakage of the thin film to fuse the powder toner.